**AMENDMENTS TO THE CLAIMS**:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-3 (Canceled)

Claim 4 (Currently amended): A method for providing an extended ~~linear~~ dynamic range in an analyte assay that uses scattered light from light scattering particles at one or more assay sites as signals, said method comprising:

(a) detecting a first set of integrated scattered light intensity signals ~~intensities~~ from light scattering particles at one or more assay ~~a plurality of~~ sites with a sensor having a dynamic range, wherein the integrated scattered light intensity signal collected from at least one assay site exceeded the dynamic range of the sensor;

~~(b) repeating detection using one or more light filters such that signals generated by the sensor are linearly proportional to the integrated light detected at one or more of sites with high integrated light intensities; and~~

~~(c) scaling the signals from said one or more sites by factors based on the light transmitted by said one or more filters to quantify the integrated light from one or more of the sites, thereby providing the extended dynamic range.~~

(b) applying at least one optical filter having an optical density to provide a reduced-intensity integrated scattered light signal that does not exceed the dynamic range of the sensor, said reduced intensity scattered light signal is from at least one of said at least one assay site that produced an integrated light scattering signal that exceeded the dynamic range of the sensor;

(c) detecting a second set of integrated scattered light intensity signals from the light scattering particles at said one or more assay sites with the sensor, said second set comprising the reduced-intensity integrated scattered light signals of step (b);

(d) converting the reduced-intensity integrated scattered light signals to a scaled signal using a conversion factor related to the optical density of the optical filter; and

(e) combining the scaled signal with the first set of integrated scattered light intensity signals to provide an extended dynamic range.

Claims 5-15 (Canceled).

Claim 16 (Currently amended): The method of claim ~~3 or~~ 4, wherein the ~~light transmitted by the filters is measured using~~ conversion factor is determined from a transmission curve for the filter based on measurements of transmission of light from a white light source through the filter.

Claim 17 (Currently amended): The method of claim ~~3 or 4~~ 16, wherein ~~the factors for scaling the signal are calculated from~~ the transmission curve for the filter is wavelength-dependent.

Claim 18 (Currently Amended): The method of claim ~~3 or~~ 4, wherein ~~scaling~~ converting the ~~signal~~ one or more reduced-intensity signals to one or more scaled signals comprises the step ~~steps~~ of~~:~~

~~(a)~~ —— multiplying the one or more reduced intensity signals by the conversion factor ~~dividing the signals of the assay by the wavelength dependent transmission curve~~ of the at least one filter. ~~or more filters used to collect the image;~~

~~(b) —— setting to zero the values from pixels that were saturated; and~~

~~(c) —— combining the two or more signals.~~

Claim 19 (Currently amended): The method of claim ~~3 or~~ 4, wherein the ~~one or more filters are~~ at least one filter is selected from the group consisting of longpass filters, shortpass

filters, bandpass interference filters, filter wheels, neutral density filters, color filters, notch filters, super notch filters, supernotch plus filters, and filter monochrometers.

Claim 20 (Currently amended): The method of claim ~~3 or~~ 4, wherein ~~the~~ an amount of light transmitted by the at least one filter ~~or more filters~~ is selected from the group consisting of 1%, 3.2%, 6.3%, 10%, 13%, 16%, 20%, 25%, 32%, 40%, 50%, 63%, 70%, and 80% of an amount of light entering the filter.

Claims 21-26 (Canceled)

Claim 27 (Currently Amended): The method of claim ~~1, 2, 3,~~ 4, ~~5, or 6,~~ wherein the integrated scattered light intensity signals from the light scattering particles comprise light scattered by the light scattering particles, light emitted by fluorescent entities on the light scattering particles, or both.

Claim 28 (Canceled)

Claim 29 (Currently amended): The method of claim ~~1, 2, 3,~~ 4, ~~5, or 6,~~ wherein the extended dynamic range comprises integrated scattered light ~~intensities~~ intensity signals quantified over at least four, five, six, or seven orders of magnitude.

Claim 30 (Currently amended): The method of claim ~~1, 2, 3,~~ 4, ~~5, or 6~~, wherein the dynamic range is extended by at least one order of magnitude over the dynamic range of an assay without the extension of dynamic range and the extended dynamic range is linear.

Claim 31 (Currently amended): The method of claim ~~1, 2, 3,~~ 4, ~~5, or 6, which~~, further ~~comprises~~ comprising the step of:

(f) forming an image of one or more of the one ore more assay sites with the combined scaled signal and first set of integrated scattered light intensity signals from step (e).

Claim 32 (Currently amended): The method of claim 31, wherein forming ~~the formation of~~ the image comprises the steps of identifying background portions of the image, and removing signals corresponding to the background portions of the image.

Claim 33 (Currently amended): The method of claim ~~1, 2, 3,~~ 4, ~~5, or 6~~, wherein the sensor is selected from the group consisting of a camera, a photographic film, a video camera, a charged-coupled device, a charged injection device, a photodiode, a photodiode array, and a photomultiplier tube.

Claim 34 (Currently amended): The method of claim ~~1, 2, 3,~~ 4, ~~5, or 6~~, wherein said ~~plurality of~~ at least one or more assay sites are separately addressable assay sites.

Claim 35 (Currently amended): The method of claim ~~1, 2, 3,~~ 4, ~~5, or 6~~, wherein said ~~plurality of~~ at least one or more assay sites are associated with a physical form selected from the group consisting of a slide, a membrane, a filter, a test tube, a vial, a microtiter plate, a microarray, a small volume device, or a gel.

Claim 36 (Currently amended): The method of claim ~~1, 2, 3,~~ 4, ~~5, or 6~~, wherein said ~~plurality of~~ at least one or more assay sites are present in a sample selected from the group consisting of a tissue, a tissue section, a cell culture, a cell, a cell organelle, a chromosome preparation, and a chromosome.

Claim 37 (Canceled)

Claim 38 (New) The method of claim 4, further comprising, after step (c) repeating:

applying at least one at least one optical filter having an optical density that is different than the at least one optical filter in step (b) to provide a reduced-intensity integrated scattered light signal that does not exceed the dynamic range of the sensor, said reduced-intensity scattered light signal is from at least one of said at least one assay site that produced an integrated light scattering signal that exceeded the dynamic range of the sensor; and

detecting another set of integrated scattered light intensity signals from the light scattering particles at said one or more assay sites with the sensor, said another set comprising the reduced-intensity integrated scattered light signals of the repeated step (c).